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LECTURE
INTRODUCTORY TO THE COURSE
ON
MATERIA MEDICA AND PHARMACY,
IN THE
UNIVERSITY OF PENNSYLVANIA.

BY
JOSEPH CARSON, M. D.
Professor of Materia Medica and Pharmacy.

DELIVERED OCTOBER 10, 1850.

PUBLISHED BY THE CLASS.

PHILADELPHIA:
Merrihew & Thompson, Printers,
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CORRESPONDENCE.

At a meeting of the Medical Students of the University of Pennsylvania, held Oct. 18th, 1850, Dr. W. JAMES DARGAN of S. C., was called to the Chair, and D. W. LASSITER of Va. appointed Secretary.

On motion, resolved that a committee of three be appointed to wait upon Profs. WOOD and CARSON and solicit a copy of their Introductory Lectures for publication.

The committee appointed consisted of MESSRS. SHARPE, HAGNER and WILLIAMSON.

Philadelphia, October 19th, 1850.

DEAR SIR:—The Medical Class of the University of Pennsylvania being much pleased with your eloquent and highly instructive address, have appointed us a committee, to request from you a copy for publication.

A compliance with their wishes on this subject, will be highly acceptable to the Class as a body, and to us individually.

We have the honor to be, Sir,

your obedient servants,

T. SPENCER SHARPE, of Ky.

D. R. HAGNER, " D. C.

JAMES WILLIAMSON, " Va.

JOSEPH CARSON, M. D.,

Prof. of Mat. Med. and Pharmacy, University of Pennsylvania.

October 21st, 1850.

GENTLEMEN:—The manuscript of my Introductory Lectures is at your disposal, in compliance with the wishes of the Class, so flatteringly communicated through you.

Allow me to express to you my acknowledgement of the honor conferred by the request, and at the same time assure you and the members of the Class, that my earnest desire is to render my instruction both profitable and acceptable.

I am, very truly,
your obedient servant,

J. CARSON.

To MESSRS. SHARPE, HAGNER and WILLIAMSON,
Committee of the Medical Class, University of Pennsylvania.

INTRODUCTORY LECTURE.

In this scrutinizing age, when the value of every species of information is much discussed, and opinions are expressed, adversely or favourably, with regard to the necessity or the advantage of devoting time, labour, and expenditure to the acquisition of one kind or another, it may be important to ascertain how far we can be sustained, in advocating the claims to respect and attention, of a particular department, and in insisting upon the necessity of its cultivation.

In correctly estimating the value of special knowledge, and the efficiency to be derived from it, errors into which the superficial are prone to wander, must be avoided. A great mistake is to look merely to the practical results, and determine that efficiency consists alone in their attainment, without regarding the modes by which they have been arrived at. It is true, that the practical application of information must be the test of value, in promoting the many objects which in society are regarded of paramount importance. But can this be isolated, can it be separated from principles, and is it possible to seize upon the last link in the chain of results and expect to possess the clue to success in obtaining them? This would be essentially resolving all art, all skill into a mechanical operation, requiring nought but sleight of hand for its continuance, in which a child may be as effective as the full grown intellectual man. The work may be as well executed, so long as every thing goes smoothly, but difficulties and obstacles are always to be encountered, and then, knowledge of details becomes power, essential to their

removal. To pursue practical results without principles, depends upon success in imitation, and this must fail if models cannot be resorted to. The routinist is an imitator. Experience has always demonstrated, that in every pursuit, he is the proficient who can go behind results, and comprehend the secret influences which produce, maintain, and regulate them, who can reason upon, and not work blindly in his vocation. Such is the philosopher who builds on principles.

Another mistake arises from not considering the fact that all things are in progress. Transition appears to be a natural order; advance is perpetual in whatever promotes the comfort, adds to the enjoyment, or renders ornate the accompaniments of existence. It has been remarked by that impressive writer Virey, "that the humblest citizen of Paris or of London, is better clothed and better lodged, than Dagobert, Ethelred, or the ancient kings of France or England." This is owing to the improvements and discoveries in the arts and sciences, of which successive times have reaped the profit. The utmost limit of perfection attainable at one period, is far behind that arrived at by generations who follow; new inquiries are constantly supplanting old ones, inventions become antiquated, and to be stationary in knowledge is to be outstripped by industry and enterprise. Art and science then must be mastered, not only for immediate application, but in order to keep pace with them; that in the race of competition, equality at least may be preserved. It is not to be expected that all minds should be equal to the task of augmenting and perfecting knowledge; this is allotted to the few whose genius fits them for discovering and developing truths, but all should be so cultivated as to profit by advances, as to perceive the advantages to be obtained from them. By overlooking the progressive tendency, efficiency is paralyzed.

The especial department of Medical Science, which it becomes my duty to bring before you, to expound and illustrate, is *Materia Medica* and *Pharmacy*. Its origin is coeval with the commencement of the healing art, for out

of it sprung medicine. Among the several branches which contribute to medicine, a separation became expedient; and this with others has been rendered independent and prominent; we are therefore compelled to consider it alone, to enter the temple specially dedicated to its use; and now, standing as we do, at the very portals, let us cast our eyes above them, and read the inscription there clearly written,—*Originating in Science—Maintained by Science*. From this we learn the character of our department.

It has been the custom to trace the source of the *Materia Medica* to accident, analogy, or blind experiment. With little light to guide inquiry, without a clear conception of what purpose is to be accomplished, but small progress in research can be expected. Facts however constitute the basis of science, and the first facts, no matter how few in number, definitely established, became the germs from which it grew. If we go back to the earliest periods, or look at the lowest social condition of the human family at present to be found, we perceive some facts prominent; their acquisition was entailed upon the exercise of intellect. Observation is an instinctive, irrepressible attribute of mind, and no matter in what way stimulated, or by what means directed, the results are positive. Whether in the hands of magi, enchanters, or the medicine man, the knowledge of natural facts as decidedly elevates the possessor above his fellows, as the most abstruse, refined, and extended learning now distinguishes the savan from the mass of the community. The co-ordination of facts gave science form, embodying it for after application. Such names as *Hermes*, among the Egyptians, and *Esculapius* among the Greeks, whether real or fictitious, represent the truth, that by certain individuals, the earliest on record, the facts of medical science were incorporated into system.

We do not wonder, nor does it detract from our position, that in days of superstition, medicine and religion should be associated; that a benefactor should be deified, and that even temples should be erected to him, of which the priests

were ministering servants, not only at the altar, but in the cure of maladies. We find this to have been the case among all the nations of antiquity. Symbols and insignia have great charms for the multitude, and veneration for those whose skill is felt, and made apparent, may easily be carried to the belief in what is supernatural. The restriction of medical learning, the mystery and ceremonials which hung around its application, were well calculated to deceive and to mislead; natural remedies were overlooked, and what was due to scientific knowledge was attributed to miraculous interference. That efforts were made to preserve and to perpetuate the information that had been acquired, we know, from its having been engraved upon the columns of the temples by the Egyptians, and an after transfer made to papyri.

If fable, allegory and fiction mask and distort the truths of science among the earliest nations of antiquity, if nothing but shadowy outlines are left of its existence, affording food for conjecture to the curious, as to its extent and nature, this was not the case when it threw off the shackles of superstition and stood forth untrammelled by religious ceremonies. The unequivocal shape that the *Materia Medica* and Pharmacy assumed, exhibited in the perspicuous account of substances employed as medicines, by authors who practised physic as a distinct profession, was communicated by the collected wisdom of antecedent centuries. Effective methods of pursuing inquiries had then been stamped upon them. In the clinical statements of Hippocrates, in the natural history researches of Aristotle and Theophrastus, we have an illustration of the advances made, in true, legitimate science; they spoke not for themselves alone, but were exponents of the attainment belonging to the age in which they lived, they were masters and teachers of the generation then existing, learned in the knowledge of their day and sedulously cultivating it. From them dates upon our annals, the commencement of recorded observations and inquiries; from their era we can trace forward satisfactorily

improvements and discoveries. Le Clerc has shown that three hundred and fifty medicinal substances were then known; they had been used and experimented with, and their modes of operation detected with remarkable sagacity. A scientific origin must therefore be admitted.

Although settled upon a scientific basis, it must not be imagined, that thenceforth the path of the *Materia Medica* has been free from obstructions and devious turnings. When a certain number of facts and a few principles have been established, the mind of man is prone to shun the labour of systematic observation and experimental inquiry, and to substitute for them dogmatism and speculation; hence the rise, in the following age, of the sects, which were called Dogmatical, Methodical, Pneumatical and Empyrical, which occupied the field of Medical Science. They attempted to cultivate a barren soil, that would admit of no new productions, and the few which were so hardy as to withstand the dearth of wholesome nourishment, became wild for want of requisite attention. The abstract reasoning of schoolmen has ever interfered with experimental inquiry. The lights and shadows which are apparent in the history of our department, may also be explained by the attainment or loss of national greatness and civil liberty; the fallacies and dogmatic reasoning which characterize the disputes and discussions of the sects alluded to, were simultaneous with degeneration in manly virtues. The Grecian empire, which boasted of having produced Hippocrates, fell from her lofty elevation, and yielded up her arts, her science, and all but her past fame to Rome, the "Niobe of Nations." Pliny, Dioscorides, Galen and Celsus, redeemed the *Materia Medica* from the feebleness to which it had been reduced by false philosophy, and did more towards fostering a correct spirit of inquiry than all the sciolists who preceded them. The extension of the Roman arms into the remote regions of the East, was favourable to the cause of medical information and added to its resources.

The pall of an intellectual night was, however, destined

to settle on this great nation; her civil rights were trampled upon by tyrants; her power declined; her glory disappeared; northern barbarians occupied her forum and her halls of knowledge, and—to sum up all—the middle ages came, with their reign of darkness, bringing back barbaric customs. Science was then almost extinguished on the continent of Europe.

But, in a distant quarter, a torch was still kept burning. The Arabians had kindled it, and fed its flame most zealously. With the true light in their possession, false lights were equally conspicuous. They introduced senna, rhubarb, manna, the aromatics of India, and other articles, into the *Materia Medica*. Sugar was substituted for honey in their conserves, electuaries and syrups. Among them appeared Mesue and Serapion, who gave to Pharmacy a distinct form, and made it a separate branch. Yet, with all their improvements, the wild and visionary character of the oriental intellect is nowhere so well marked as in their medical writings. They sought for the philosopher's stone, endeavoured to commute metals into gold; romance mingled itself with the reveries of the alchymists, and a belief in charms, talismans, amulets, and magical influence, prevailed extensively.

When Europe aroused herself from the lethargy which had oppressed her faculties, some time elapsed before complete possession of them could be gained. In all the arts and sciences old information was to be sifted, new information was to be acquired. The *Materia Medica* was found to be composed of many valuable articles, but among them were others possessing no properties, or else disgusting and loathsome. A system of polypharmacy also prevailed, of which some vestiges are discoverable in the older editions of the *Pharmacopœias*, as, for instance, the *Theriaca*, the original of the Confection of Opium. The errors into which the earliest modern European cultivators of our department fell, were, therefore, owing to the difficulty of throwing off the shackles of slavish systems, and false learning;

and to partial and imperfect modes of observation and experiment. Facilities and collateral impulses were not tardy in their appearance. The art of printing established a medium of thought and intercourse; civilization, as exhibited in government, habits, mental accomplishments and manners, rapidly progressed; nation vied with nation in extending a universal domain—the domain of letters. With proficiency in the physical sciences came greater capabilities of exploration; countries were made of easy access, which had been merely subjects of tradition; their products were drawn forth and became objects of profitable traffic; and, to crown all, a new world was discovered, inexhaustible in its productions. The progress of our department from that time onward, has been steady, certain, and uninterrupted. It is proper, then, for us to examine the means by which researches have been prosecuted which have contributed to its present elevated position.

In looking for the instruments and causes of progression, we are prompted at once to turn to the auxiliary sciences, whose cultivation has aided in unravelling the arcana of Nature, and reflected inestimable blessings on our own department. In truth, from the flood of light which has issued from them, and the absolute necessity of their assistance, they have become incorporated with it.

I have already alluded to the Arabians as prosecutors of chemical enquiry. Under the name of Alchemy, the restorers of learning to Europe received this science, tarnished with absurdities, and distorted by illusive phantasms. The mysterious and unintelligible methods of performing all the operations of Alchemy, the exaggerated powers with which it was invested, the unlimited control it was supposed capable of exerting over the affairs of the world, and lastly, the practices of which its adepts were suspected, soon gave to it the name of the *Black Art*, a name calculated to awaken terror and suspicion in ignorant and credulous minds. One discovery, at this stage, proceeded from the researches instituted, which, from its

immense importance in separating the subtle and volatile ingredients of substances, and the influence it has had upon analysis, deserves especial mention. I allude to *distillation*. As a mean solely of searching into the composition and nature of bodies, it is of great importance; but by furnishing us with alcohol, has provided an agent of extraordinary adaptation to the prosecution of further enquiries, and the detection of new principles. Misapplied as alcohol has been, and prostituted to purposes of self-abasement, it has proved the greatest scourge from which mankind has suffered; but confined to its legitimate use in Pharmacy and Medicine, it may be regarded as having been eminently serviceable.

Chemistry, in the hands of its earlier cultivators, at the head of whom were Basil Valentine, and Paracelsus, was characterized by vain boasts and daring assumption. This was in full accordance with the temper of the times. The extravagance of the assertions which were made, soon resulted in the conviction of their falsity, while the invaluable truths, which constituted their basis, have remained unimpeached, and formed a nucleus around which have been arranged the subsequent additions of equally inquiring, but less ardent intellects. The inexhaustible richness of the mine in which they laboured had been displayed, but the true nature of the ore was not apparent, until the dross and impurities had been separated, in the refining crucible of philosophy, constructed by the genius of Bacon. The agency exerted by the establishment of the inductive system of reasoning, and by enforcing the legitimate end of experimental inquiry, was soon conspicuous in their efforts upon the *Materia Medica* and Pharmacy, as is illustrated by the improvements and discoveries of Glauber, Glaser, Lemery, Gaubius, and others, whose contributions were numerous and important. But the full exhibition of the infinite resources of Chemistry was reserved for later times, in the honour of revealing which our own age may proudly claim a large participation. The field of its operation has

been demonstrated to be as extensive as the existence of matter, and the utmost limit beyond which it cannot pass, the detection of the last constituent principle. The readiness with which the elements of "air, earth and water" resolved themselves into their simple forms, when touched by the magic wand of analysis, wielded by the hand of Black, of Priestly, of Lavoisier, of Sheele and of Cavendish, was but the promise of a future harvest of new discoveries, which has been amply realized in the labours of Davy, of Vauquelin, Proust, Brande, Robiquet, Pelletier, and numerous others, and in the daily announcement of successful endeavours to penetrate the constitution, and unravel the composition of all material substances.

By these discoveries, both the theory and practice of Pharmacy have been rendered more lucid and certain. As the laws of combination and affinity were established, the just selection of ingredients in compound medicines was regarded of essential importance, and the association of incompatibles, the source of endless embarrassment and perplexity, has been avoided. As new substances possessing active properties were detected, their applicability to the purposes of medicine was ascertained, and their introduction into practice, either alone or combined, soon became universal. By the isolation of the efficient principles of vegetable substances, and the removal of inert and useless matter, with which they are conjoined in nature, chemistry has revolutionized the entire constitution of the *Materia Medica*, and brought the organic as well as the inorganic world completely into contribution to the wants of suffering humanity. By determining the composition of bodies, it has led to the assumption of a nomenclature and a classification expressive of the progress that has been made, but more than this, it is the touchstone by which fraud is discoverable, and the sure safeguard against imposition.

One important advantage to the practitioner, afforded by chemistry is still to be noticed, and in summing up, should least of all be forgotten: it is that derived from the power

which is placed at his disposal of antagonising the properties of poisonous agents. What but a knowledge of chemical combination, and of the products thereupon resulting, would have led to the employment of the simple proximate element tannin, to neutralize the activity of strychnia and veratria, or have suggested the administration of the sesqui-oxide of iron to disarm of their deadly effects the preparations of arsenic. It is apparent from what has been stated, that the zeal and devotion of chemists has placed our department under lasting obligations.

Another auxiliary branch is Botany. A large proportion of the substances used in medicine, are of vegetable origin, hence it becomes necessary to inquire into all the particulars connected with them. While but a limited number of vegetable productions were known, and they restricted to a small part of the earth's surface, the modes of designating them from their size and habit, by arbitrary or complicated names, the loose and vague descriptions, and the account of them, framed with the sole design of displaying their sensible or medical properties, were not attended with the inconveniences which have since arisen, and which have perplexed those who have sought to establish the identity of ancient and modern medicinal articles. As the boundaries of discovery were enlarged, and new products accumulated in the hands of investigators, greater precision became imperative; they were unavoidably impelled to reconstruct the science upon principles more solid and lasting, furnished by a faithful examination of all particulars, calculated to throw light upon the elaborate and infinitely diversified structure of the vegetable creation. It was then found that to render such researches of the greatest service, a methodical direction must be given to them, or a useless expenditure of toil would ensue. The advantages accruing from the adoption of a comprehensive plan, embracing all the objects of the science, in unfolding which, each division has a proper share of importance assigned it, are obvious, when a comparison is instituted between the stages of improvement, presented at

intervals after having been remodelled by acute observers, whose lives have been devoted to its cultivation. A systematic method of naming, describing, and classifying plants, has constructed for botany, a firm and durable foundation; this has rigidly been adhered to, in the works of those who have the highest claims to consideration as master builders of the beautiful edifice conjointly erected by their skill. The systematic labors of Gesner, the Bauhins, of Ray, Tournefort and Rivinus, contributed much to the progress of the *Materia Medica*. They were but pioneers of reform, to be followed by others of greater reputation. With the discovery by Linnæus, that plants obey the universal law of highly organized beings, in being propagated by sexes, an additional impulse was communicated. The Swedish luminary impressed botany with new features, and heightened interest; his sexual classification was enthusiastically received; but further, he exhibited the connexion between his favorite pursuit and the *Materia Medica*, he suggested modes by which improvements could be introduced, and proved the possibility of establishing medicinal affinities in groups, or families of plants, which previously had been hardly suspected. By his precepts and his example, he stimulated his pupils, and has left a monument of his own surpassing sagacity and powers of research, and of their ability, on the pages of the most remarkable scientific transactions of the time—the *Amenitates Academiæ*.

But with Linnæus the capabilities of botany for greater development were not exhausted;—it was destined to further triumphs;—the illustrious French philosopher Jussieu who succeeded him, discovered a new field in which to exercise his unwearied patience, and extraordinary talent of comparison. The natural method of this illustrious botanist stands equally conspicuous for profound research with the Linnæan system, and has been equally productive of extension to our resources. Can it now be seriously alleged, that botany has not led to the path of improvement, nor

contributed to the extension of our department? The whole history of discovery informs us otherwise. The disciples of Linnæus and Jussieu were deeply imbued with the spirit of their masters; the enthusiastic desire was aroused within them, to explore every accessible locality, whence greater treasures might be procured, and courage and energy have not been wanting to traverse the sands of the desert, the pathless solitudes of the wilderness, and to brave the storms of the ocean, with no other object than the extension of scientific discovery. To be convinced that by such enterprises the *Materia Medica* has been enriched, consult the elaborate account of Peruvian bark; and it will be admitted, that from De La Condamine in 1735, to Weddell in 1850, all that we know with respect to this drug, is due to botanical explorers. They have opened fresh sources of it, and contributed to its varieties, they have indicated the localities of the most valuable, as well as the worthless, and have aided commerce by pointing to their distinguishing features. The late discovery by Weddell, that a vast store of Calisaya bark is to be found beneath the surface of the ground, over a large tract of country, from which the trees in times past have been cut—in truth, a placer of quinia—would, if rightly improved by enterprise and capital, afford a yield amply compensating, and a thousand times more beneficial to society, than that derived from any placer in California. Were it necessary to multiply examples of this connection between the researches of botanists and our information with respect to the vegetable *Materia Medica*, every prominent article would be brought into requisition. From the equator to the poles, whether it be a fragrant spice that pours forth its luxurious perfume to the evening breeze, or the nutritious, strength-giving lichen, which retires beneath the snow, each region has been found by the votaries of botany to yield resources to the list of medicines.

It is not our purpose to enter upon the discussion as regards the direct practical advantages of familiarity with the branch of science which we have just shown to have

had so important a bearing upon the progress of the *Materia Medica*. This would require more detail and time than can be now afforded. Nor shall we dwell upon other branches of natural science, which by their cultivation and extension have added to our resources, or thrown light upon the sources of substances long known and employed. Let us examine our subject in a different aspect, with reference to the progress it has made from scientific cultivation. I mean its therapeutic application.

The *Materia Medica* aided by pharmacy affords the means for the curative treatment of diseases. To perform this duty successfully, depends upon two important considerations; first, a comprehension of the manner of impressing the organs by the remedies which are employed, and secondly, an accurate acquaintance with morbid phenomena. Physiology and pathology are auxiliary to our department. The progress made in sound therapeutics appears to have coincided with the state of the *Materia Medica* and pharmacy. They seem to have advanced *pari passu*, the same causes have been operative. Loose and unstable opinions originate in imperfect information, or in deficient and unintelligible facts. Judgment yields to the imagination, and conjecture and mere hypothesis predominate. Correct conclusions can only be arrived at by patient investigation, and centuries may elapse ere important truths are settled. By the more enlightened physicians of antiquity the primary operation of medicines appears to a certain extent to have been understood, but an appreciation of the modes of impressing the system through the medium of the organs and the vital operations, was not possessed; physiology had not sufficiently advanced; the application of medicines was empirical. No rational, sound therapeutics could be established before the discovery of the circulation of the blood, that *primum mobile* of all curative measures, as well as of all vital actions, a discovery which immortalized the name of Harvey. Without this lamp to guide them, how vain were the blind gropings and feeble efforts of the schoolmen to eluci-

date therapeutical principles, how idle their altercations. The stimulus communicated by this discovery had a marked effect upon the science of life. The special duty of organs in the economy, whose office had been matter of conjecture was made apparent; the heart and circulation, the lungs and pulmonary apparatus, the stomach and associate organs, the brain and spinal chord, with their nervous connections, the harmonious play of organs, as well as the nutritive, secretive and absorbent processes, were viewed in a new aspect. From that time to the present, each year has brought with it some important exposition; physiology has been rendered a positive science; its details are in progress, but its foundation has been securely laid, and made immutable by the labors of Leuwenhoëk, Lancissi, Haller, Fontana, Bichat, Hunter, Bell, Gmelin, and a host of indefatigable inquirers. Therapeutical action is based upon physical action, which must be traced in the *modus operandi* of every article of the *Materia Medica*. Observation and experiment have dispelled dark clouds of uncertainty which hung around the phenomena produced by medicinal agents, and by perseverance more light will be thrown upon them. In their physical aspect, the throes of a dying Socrates, or the writhings of the meanest animal exposed to scrutiny upon the table of Majendie, are equally instructive.

With success in physiological inquiry, our pathological knowledge has advanced. From Morgani to Louis contributions have been made to it, by which therapeutic indications become obvious. A single illustration will be sufficient; that furnished by the diagnosis of pneumonia, each stage of which requires an appropriate treatment.

From the exposition which has been given, the conclusion becomes inevitable, that our department, which originated in a spirit of scientific inquiry and investigation, has been maintained, fostered, and improved by its continuance.

Besides the efficiency communicated by a thorough knowledge of the *Materia Medica*, in all its details and bearings, there are other points of view in which it must be regarded.

It is inseparable from the possession of general information.

The history of drugs is in a measure associated with the history of nations ; as objects of care and culture they are identified with the races of the countries in which they are produced ; thus pepper and cubebs are associated with the habits and mode of life of the Malays, rhubarb in like manner with the Tartars, senna with the Arabs, opium with the Turks, and camphor with the Chinese. Among civilized nations the trade in them has occasioned struggles and encounters which constitute a portion of the revolutionary annals of the world. The discovery and supremacy of the Portuguese in India, their trade in costly gums, spices, and valuable products, the cession to the Dutch and their monopoly, and the downfall of Holland's power before the giant arm of England, or the exclusive traffic of the Spaniards in the products of the South American Colonies, and subsequent failure to maintain it, from internal political resistance, and foreign aggression, will serve as an illustration of the association referred to. From histories of discovery and conquest, from books of travels, are to be gleaned valuable facts pertinent to the subject.

Again, from the wide spread range of our department, it leads to contact at almost every step, with some interesting topic of investigation, connected with the material universe. Curiosity, even the most sluggish, cannot fail to be aroused at the array of objects calculated to stimulate it into exercise. By the assistance of the sciences enumerated, the book of nature is spread before the student, and whether in the retirement of his chamber, communing with the interpreters of nature's laws, and the explorers of her productions, or searching for himself to comprehend the structure, growth, and formation of the material objects by which he may be surrounded, ample food for mental gratification is afforded. Through the instrumentality of these sciences, he becomes a citizen of the world, a Cosmopolite in the proper acceptation of the term, and finds himself equally at home, be it traversing the wards of hospitals,

surrounded by disease, and ministering to its subjects, be it exploring caverns of the earth with the grim miner, or be it wandering on the expanse of surface, with every variety of feature occasioned by climates tropical, temperate, or frigid.

The studies of our department then do not make merely physicians, but accomplished gentlemen, philosophic enquirers, ready and able to do their part towards the extension of knowledge, and the increase of the common stock. Their vocation may carry them to all quarters of the world, either in private or public service, and as their country, or science at large may reap the benefit, opportunities should be embraced with an alacrity which will bestow reputation on themselves, and shed lustre upon the profession they exercise.

Having been honored with the appointment, as Professor of Materia Medica and Pharmacy, from the Trustees of this University, I can assure you, gentlemen, that it is with unaffected diffidence I enter upon my duties. I am aware of the great responsibility which is attached to their fulfilment. The chair of which I am the incumbent, is one in which laurels have been won, and worn with grace and dignity. From it, Barton expounded the principles of the Materia Medica, and awakened the liveliest interest in its cultivation among his pupils. Here Chapman gave his first practical lessons, which, continued through a career long and brilliant, have made his name illustrious as a teacher; and here my immediate predecessor consummated that reputation which places him among the first of living pharmacologists. Such masters of their department are beyond competition, and can I hope to emulate them? Of one quality which was eminently theirs I do confess I am ambitious, and that is to be useful. We have a task of labor together, and I ask of you hearty co-operation. We are co-laborers in an undertaking requiring mutual assistance, and the firm friendship of common interest. Let us then, gentlemen, give each other the hand of fellowship, that in parting, each of us can at least say, he has zealously endeavored to do his duty.

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